STEPTOE & JOHNSON LLP

ATTORNEYS AT LAW

ET-1475

David H. Coburn
202.429.8063
dcoburn@steptoe.com

1330 Connecticut Avenue, NW
Washington, DC 20036-1795
Tel 202.429.3000
Fax 202.429.3902
steptoe.com

May 12, 2005

Via Hand Delivery

Mr. Kenneth H. Blodgett
Environmental Protection Specialist
Section of Environmental Analysis
Surface Transportation Board
1925 K Street, N.W.
Washington, D.C. 20423

Re: **Tongue River Railroad Company, Inc. - Finance Docket 31086 (Sub-No. 3) - Construction and Operation of the Western Alignment - Draft Supplemental Environmental Impact Statement**

Dear Mr. Blodgett:

In response to SEA's request for information on the use of trestles instead of cuts and fills for the TRRC line, please find enclosed a letter from Mr. Daniel Hadley of Mission Engineering, Inc., a consultant to TRRC, Inc. Mr. Hadley's letter describes the problems that would attend the use of trestles in place of planned cuts and fills, and the measures that will mitigate the impacts of such cuts and fills.

We trust that this fully responds to the concerns that have been raised, but look forward to any further questions that you might have on this matter.

Sincerely,

Betty Jo Christian
David H. Coburn
Attorneys for Tongue River Railroad Company, Inc.

cc: Ms. Victoria Rutson
Mr. Scott Steinwert
Mr. Douglas Day

MISSION
ENGINEERING,
INC.

730 East Main - Suite 106
Billings, MT 59105

Phone (406) 248-3233
Fax (406) 248-3383

MINE PLANNING • TRANSPORTATION DESIGN • CIVIL ENGINEERING

May 11, 2005

Mr. Douglas Day
Wesco Resources, Inc.
P.O. Box 80902
Billings, MT 59108-0902

Re: Tongue River Railroad Company

Dear Mr. Day:

This will respond to your request that I respond to an inquiry received from the third party contractor working with the Section of Environmental Analysis ("SEA") at the Surface Transportation Board on the whether TRRC would consider the use of trestles in place of fill embankments, especially in locations where the rail line would cross side canyons. Apparently, this question has been raised as a result of comments filed by the Bureau of Land Management ("BLM") in response to the Draft Supplemental Environmental Impact Statement ("DSEIS") issued by SEA. The answer, in short, is that trestles would pose engineering, safety and visual problems that, in our view, make their use infeasible relative to planned cuts and fills. Further, the planned cuts and fills will not, as discussed below, have the adverse impacts that have been raised, particularly in view of SEA's recommended mitigation measures.

General Considerations Regarding Planned Cuts and Fills

The engineering design criteria, considerations and procedures for developing the TRR alignment are based on sound civil and railroad engineering experience and expertise. The process has been multifaceted, taking into account many factors including: type of rail traffic; Federal Railroad Administration specifications; location and alignment with respect to the Tongue River flood plain and its major tributaries; location and alignment with respect to the existing transportation and irrigation systems; existing residences; land use; wildlife habitat; wetlands; and, many other social economic, land use and environmental factors.

In conjunction with the above design criteria and constraints, the design process requires the engineers to develop an alignment which minimizes the amount of earthwork but simultaneously incorporates the least amount of grade and curvature. The design process must consider reasonable front end capital construction cost expenditures balanced with sustaining economic long term operating and maintenance characteristics. Items such as excessive steepness of grade or horizontal curvature can exponentially increase the operating and maintenance costs for the railroad.

For example, rail alignments carrying "unit train coal traffic" must replace curved track and ties five times as often as compared to tangent (straight) track. Steeper grades not only require additional locomotives and excessive amounts of fuel to operate, but also require longer starting and stopping distances which have an effect on safety.

The earthwork design criteria take into consideration cut and fill slopes which are chosen to minimize the amount of excavation required to obtain a balance of material without jeopardizing the stability of the constructed slopes. Special design criteria were considered in the design of the Western Alignment. As an example, for cuts and fills exceeding 100 feet in height, slope ratios are flattened to provide for greater stability and horizontal "benches" are added for each elevation increase of 50 feet. The benches not only provide greater slope stability, but also provide erosion control features by intercepting and diverting water away from the constructed slope, maximizing erosion control and minimizing sediment loss. During the final engineering design process, additional geotechnical information will be gathered for cuts and fills throughout the alignment to develop specific slope recommendations for final earthwork design to ensure slope stability and minimize soil erosion loss.

With respect to the question that has been asked as to the feasibility of utilizing railroad trestles in place of large fills to cross side drainages on the Western Alignment, some history is worthy of note. During the late 1800's and early 1900's, trestles were constructed in high mountainous areas where canyons or valleys were crossed with tunnels on each end. The tunneling through "granite type" rock left insufficient fill material to cross valleys. Since timber was readily available, trestles were constructed to "bridge" the valleys. Today, with more sophisticated designs, engineers utilize "pre-stressed concrete" bridge beams or "steel box girders" to construct rail bridges. In any event, throughout the length of the TRRC alignment there are no "granite" rock types that will require tunneling.

In the case of the Western Alignment, materials are suitable for excavation, and thus the use of optimum cut and fill design techniques is available. If pre-stressed concrete bridges or trestles were incorporated into the design of the Western Alignment, excavated material would have to be disposed of in large stockpiles. As an example, if a trestle were constructed at Post Creek instead of fill, an off-site stock pile of 3.3 million cubic yards would have to be created. The process of disposing of the excavated material and trestle construction would increase the amount of land and right-of-way necessary for construction of the rail line. Again, using Post Creek as an example, the additional right-of-way for a 3.3 million cubic yard stockpile (30 feet high x 2000 ft long x 1600 ft wide, with 2:1 side slopes), would require an additional 73.5 acres of right-of-way.

Further, trestles are very expensive to build, maintain and operate as compared to earth embankments. Earthwork embankments can be inspected during the normal "High Rail" track inspection process. However high trestles would require specialized equipment and trained individuals to annually review all of the trestle joints, abutments, piers, etc. In addition, a derailment occurrence on a trestle could be catastrophic. Normally if a train derails on a large fill section the locomotives, and or rail cars will roll on their sides, and perhaps partially slide down the slope. The "clean-up" process can be done from the top or the bottom of the fill slopes. However, with a derailment on a trestle, the locomotive or cars will fall off the trestle, which may also damage the trestle piers, and abutments, causing major damage to the trestle. In addition, the likelihood of deaths or serious injuries could be heightened, along with the possibility of catastrophic damage to the locomotive and cars.

In summary, the result of incorporating trestle design into the Western Alignment would not only greatly increase the safety risks, construction, operating and maintenance costs of the railroad, but would also increase the right-of-way requirements for trestle construction and disposal of "excavated" materials.

BLM's comments to the DSEIS have suggested that the implementation of trestles for the crossing of large drainages should be considered for the Western Alignment due to the following concerns: possible hydrological impacts, including fills creating an embankment or "dam" effect across drainages; potential increase in soil erosion; potential impacts on wildlife; and visual resource effects. These issues are addressed in the following sections of this letter, in which I will explain that the cut/fill impacts feared by BLM will be addressed through the recommended mitigation.

<u>Culvert design criteria and hydrological impacts</u>

Hydrologic control measures for the TRRC project were designed by first developing flood flows for all major drainages intercepting the alignment using the Soil Conservation Service ("SCS") triangular unit hydrograph procedures outlined in detail in the SCS National Engineering Handbook, Hydrology: Section 4, particularly Chapters 7, 9, 15, and 16. Parameters required for this procedure for each drainage basin include area in square miles, stream length in miles, basin relief, and adjusted point precipitation.

Area, stream length, and basin relief were measured on USGS 7 ½-minute quad maps. Depth-duration analyses for the area were then performed using methods outlined in NOAA Atlas 2, Precipitation-Frequency Atlas of the Western United States. Point precipitation values were adjusted according to standard procedure when the drainage basins were large.

Based on corresponding flood flow determinations, round, corrugated metal pipes ("CMP") with either a galvanized or bituminous coating were sized for the 10- and 25-year, 24 hour peak flows. The CMP's are designed to pass the 10-year peak with no headwater at the entrance, to safely pass the 25-year peak flow with one-pipe diameter of headwater at the entrance, and are sized with a minimum diameter of 24". The 50-year and 100-year flood flows also were checked to insure that the peak runoff would not overtop the fill and that the integrity of the constructed rail embankments would be maintained.

Providing that existing channels are not excessively steep, CMP's will be designed to conform to the existing flow-line, in order to provide a smooth interface between the bottom of the CMP and the existing channel, and to maintain the gradient of each of the drainages. Factors such as channel slope and flow velocities will govern the final gradient for culvert installation. For normal (non-flood-flow) conditions, culverts will be designed to prevent scour and to keep flow velocities below 5 feet per second.

For the few drainages that could support fish movement, the inverts of the culverts will be lowered below the normal flow-line to enhance the development of a natural stream bed. Box culverts and/or low profile arch culverts may also be used to maintain a natural stream bed and minimize disturbance. It should be noted that all perennial drainages supporting fisheries and crossed by the TRR line are crossed with bridges, not culverts.

The source of the criteria used by TRRC in culvert sizing is derived from the Montana Department of Transportation (DOT) Hydraulics Manual, Chapter 7, Hydrology, October 1995. The Montana DOT criteria are developed in compliance with Federal Highway Administration standards. According to the Montana DOT criteria, culverts must satisfy the following criteria: no railroad/roadway overtopping; no backwater damage to adjacent property; minimum 24" CMP under all railroad facilities; and, Maximum Allowable Headwater design criteria. Culvert sizing for the Western Alignment were developed following the Montana DOT criteria and range in size from 36" to 120" in diameter. Further, subject to recommended Mitigation Measure 49 contained in the DSEIS, the TRRC is required to ensure that all culverts and other drainage structures comply with the design guidelines adopted by the American Railway Engineering and Maintenance of Way Association.

The BLM has stated concerns indicating that the use of culverts utilizing the design criteria stated above will cause "damming" and creation of "large lakes" behind the rail embankments. The largest, or peak, flood flows are caused by high intensity thunderstorms. Because of this, the largest "flood peaks" occur over a short period of time, and usually subside over a few hours depending upon the geometry of the drainage area. In any case, any headwater that might be created during a 25, 50 or 100 year flood event would dissipate in less than 8 hrs with the proposed design methods. It again should be noted that these "culvert drainage design criteria" are not unique, but recommended and utilized by the Montana Department of Transportation, the Federal Highway Administration, and the Federal Railroad Administration.

Soil Erosion Issues

As noted in the DSEIS, potential gross soil loss estimates are very conservative and do not reflect the application of erosion and sediment control Best Management Practices (BMPs) to be required during construction. In addition, the soil loss estimates assume the entire area would be disturbed at the same time. In fact, only a small percentage of the soil that would be eroded from the disturbed areas would actually be delivered to a stream. The amount of soil delivered to a stream would depend on the size of the watershed, the distance between the construction area and the stream, the degree and shape of the slope between the construction area and the stream, the texture of the eroded material, surface roughness, vegetative cover, and other factors. The use of BMP control features during and after construction will significantly enhance erosion control and sediment control.

Further, as would be required by recommended Mitigation Measure No. 36, the TRRC will be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) and an Erosion Control Plan using Montana Department of Environmental Quality Guidelines Best Management Practices (BMPs) and obtain coverage under the Montana Pollutant Discharge Elimination System General Permit for Storm Water Discharges associated with construction activity. Prior to construction of the rail line, TRRC will be required to determine which BMPs are to be employed at each location in the project area and receive Montana DEQ approval.

Nearly 20 percent of the recommended mitigation measures identified in the Draft SEIS are directed toward the control of erosion and sediment loss, reclamation and re-vegetation standards for disturbed areas during and after construction, and, ephemeral and perennial stream protection measures. In particular, the protection provided by the required Stormwater Pollution Prevention Plan (SWPPP) and Erosion Control Plan using Montana DEQ guidelines for Best Management Practices, and coverage under the Montana Pollutant Discharge Elimination System General Permit for Storm Water Discharges assures the implementation of appropriate measures to control potential erosion and sediment loss.

The SWPPP will identify areas with a high potential for soil erosion due to topography, slope characteristics, construction activities, and other factors. The SWPPP will incorporate erosion control practices to protect the soil surface and prevent soil particles from being detached by water or wind. Erosion control BMPs include: preserving natural vegetation; establishing vegetative buffer zones; designating clearing limits; temporary and permanent seeding; mulching; erosion control nets and blankets; surface roughening; gradient terracing; interceptor dikes and swales; grass lined channels; and water bars.

The SWPPP will also incorporate sediment control practices to trap the soil particles after being detached and moved by wind or water. Sediment control BMP measures include: sediment traps and basins; check dams; fiber rolls; silt fencing; gravel bag barriers; straw bale barriers; outlet and inlet protection; and vegetation strips. All BMPs are installed according to standard specifications and good engineering practices.

Wildlife and Cattle Movement Issues

Pursuant to recommended Mitigation Measure No. 3 in the DSEIS, numerous cattle passes will be installed along the rail alignment in appropriate locations identified in consultation with affected landowners. The cattle passes will be arched corrugated metal structures, approximately 11 feet high and 12 feet wide at the base sufficient to allow movement of livestock and wildlife across the rail alignment. The cattle passes will be large enough to accommodate the passage of a ¾ ton pickup truck. In addition, several recommended mitigation measures presented in the DSEIS are intended to address areas such as fencing, biological surveys, big game assessment, habitat assessment, and development of additional mitigation measures to protect biological resources providing adequate protection of wildlife resources.

Visual Issues

The proposed Western Alignment and the Four Mile Creek Alternative would traverse mostly undeveloped rangeland with natural visual resources. The potential affect on aesthetics would be related to the change in the natural landscape resulting from construction and operation of the rail line. The DSEIS did not identify any potentially significant aesthetics-related impacts, and does not recommend the adoption of any aesthetics-related mitigation measures.

Construction of some segments of either the proposed Western Alignment or the Four Mile Creek Alternative would be visible from public roads. Due to its overall length and proximity to public roads, construction activities on the Four Mile Alternative route would be more visible from public roads than the Western Alignment.

Much of the Western Alignment would be constructed in cuts, most of which would be deep enough to hide the rail line from public roadway view. The construction of some fills across drainages would be visible from some sections of public roads. Recommended mitigation measures requiring the re-vegetation of disturbed slopes would make disturbed slopes less visible from public roads and allow those slopes to blend in with adjacent undisturbed areas. By contrast, concrete or metal trestle structures would not blend in with the surroundings and would have adverse visual impacts due to their size and height.

The BLM has stated that visibility will be blocked looking up "side canyons" due to the large embankments. The side canyons that are crossed via the Western Alignment are small and very narrow, (base-width of less than 800 feet at the mouth) and have limited sight distance. If a driver or passenger were traveling at 30 mph along the existing dirt road paralleling the Western Alignment, and looked up one of the "side canyons" they would only have approximately 18 seconds to see up the narrow draw.

In addition, re-vegetation of cut and fill slopes would return visible slopes to a more natural-looking setting. Natural hills and vegetation located between the proposed Western Alignment and sections of public roads would shield views of much of the proposed Western Alignment from public roads. The Western Alignment also would not be visible for most of the Tongue River Canyon corridor. Along most of the Canyon, the Western Alignment would be located approximately 1 mile west of the public road. On the other hand, the Four Mile Alternative parallels and crosses Montana State Secondary #566 for 8.3 miles and also parallels and crosses Montana State Hwy, #314 for 8.7 miles.

I would be pleased to answer any further questions that might arise.

Sincerely,

Daniel R. Hadley

Daniel R. Hadley, P.E.
MISSION ENGINEERING, INC.